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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,761	09/29/2003	Laurent Lefebvre	00100.02.0046	1469

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ATI TECHNOLOGIES, INC.
C/O VEDDER PRICE KAUFMAN & KAMMHOLZ, P.C.
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CHICAGO, IL 60601

EXAMINER

NGUYEN, HAU H

ART UNIT	PAPER NUMBER
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2628

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/673,761	Applicant(s) LEFEBVRE ET AL.	
	Examiner Hau H. Nguyen	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-21 and 23-25 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) 9, 12, 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 recites the limitation "the second selected command". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lindholm et al. (U.S. Patent No. 7,015,913) (hereinafter, Lindholm).

As per claim 1, Lindholm teaches a graphics system and method for multi-threaded processing of data in a programmable graphics processor comprising, a reservation station having a plurality of command threads stored therein (Fig. 4, items 420, 410, 460, col. 7, ll. 44-62, col. 8, ll. 58-66), an arbiter operably couple to the reservation station such that the arbiter retrieves a first command thread of the plurality of commands threads stored therein (Fig. 4, item 430, col. 8, ll. 47-54), and a command processing engine operably coupled to receive the first command from the arbiter such that the command processing engine performs at least one

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processing command from the first command thread and thereupon updates the first command thread in the reservation station (Fig. 4, item 470, col. 9, ll. 41-51).

As per claim 2, Lindholm further teaches a done flag is set in one of the plurality of command threads after all commands within the one of the plurality of command threads have executed by the command processing engine (col. 9, ll. 60-65).

As per claim 3, Lindholm teaches the reservation station is a memory device and the arbiter (as cited above), and the arbiter retrieves the first command thread based on a priority scheme (col. 9, ll. 5-19).

As for claim 4, Lindholm teaches the arbiter retrieves a second command thread of the plurality of command threads stored therein; and the command processing receiving the second command thread wherein the first command thread and the second command thread may be interleaved (as cited above, and col. 9, ll. 33-40).

As per claim 5, as shown in Fig. 4, Lindholm also teaches the execution unit 470 performs texture processing.

As per claim 6, Lindholm et al. teach the command processing engine further includes an ALU (470) coupled to the arbiter (430) such that the arbiter is capable of providing at least one of the plurality of command threads to the ALU.

As per claim 7, Lindholm also teaches the reservation station can be a vertex reservation or a pixel reservation (as cited above, and col. 7, ll. 27-30).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 8 and 11 rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (U.S. Patent No. 5,550,962).

As per claim 8, Nakamura et al. teach a multi-thread graphics processing system comprising a first reservation station having a plurality of first command threads stored therein (106a); a second reservation station having a plurality of graphics command threads stored therein (106b); an arbiter coupled to the first reservation station and the second reservation station such that the arbiter retrieves a selected command from one of the plurality of first command threads and the plurality of graphics command threads (items 105 and 107); and a graphics processing engine operably coupled to the arbiter such that the selected command thread is received and processed by the graphics processing engine (108, Fig. 1, or 204, Fig. 2) (col. 4, ll. 35-57).

As per claim 11, as cited above and as shown in Fig. 5, Nakamura et al. the first selected command thread and the second selected command thread may be interleaved.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (U.S. Patent No. 5,550,962).

As per claim 10, although Nakamura et al. do not explicitly teach the second reservation station is a FIFO memory device, Nakamura et al. do suggest that the drawing commands can be processed sequentially (Fig. 5), therefore, it would have been obvious to one skilled in the art to modify the memory device as a FIFO memory to process sequential commands.

9. Claims 9, 12, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

10. Claims 14-21, 23-25 are allowed.

Reasons for Allowable Subject Matter

11. The following is an examiner's statement of reasons for allowable subject matter:

The prior art taken singly or in combination does not teach or suggest, a graphics processing system among other things, comprising in particular, "a pixel reservation station having a plurality of pixel command threads stored therein; a vertex reservation station having a plurality of vertex command threads stored therein.." (claim 14); or "writing the selected command thread to the first reservation station... writing the selected command thread to the second reservation station..."

Response to Arguments

12. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

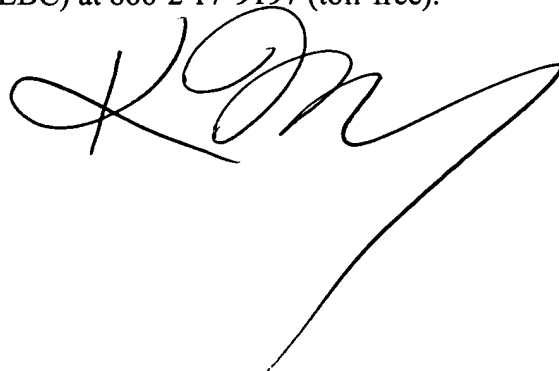
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-2 17-9197 (toll-free).

H. Nguyen

09/27/2006

A handwritten signature in black ink, appearing to be 'H. Nguyen', with a long, sweeping underline that extends towards the bottom right of the page.